

National Weather Service - Elko

The Great Basin Spotter Newsletter



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Words from the Meteorologist-In-Charge by Kevin Baker

The National Digital Forecast Database (NDFD) is now available on a web link from our home page (<http://www.wrh.noaa.gov/elko>). If you get a chance, take a look at this web site. It can be accessed from the "New!" section at the top of our home page. The data which is displayed on NDFD page is forecast by all National Weather Service (NWS) forecast offices around the nation. Our forecast area covers much of northern and central Nevada (NV).

If you click on the web page over NV, you can zoom in to the southwest U.S. and see forecasts for NV, CA, AZ, and UT. Detailed forecasts are available for temperatures, winds, sky, weather, and chance of precipitation through the next 7 days. This digital forecast suite will become the cornerstone of all future products generated from the NWS.

If you have comments about this web site, please submit them through the survey at the bottom of the web page.

Active Monsoon Season Across Northern and East Central Nevada by Cliff Collins, Senior Meteorologist

The summer 2003 monsoon season during the months of July and August was extremely active across northern and east central Nevada. Almost every reporting station had above normal precipitation, with a number of stations reporting over 200% of normal.



Picture of a rain-producing cumulonimbus cloud taken over the Ruby Mountains on a warm summer afternoon during the heart of monsoon season in August 2003.

Practically each observing station reported over one inch of precipitation, with quite a few reporting over two inches of precipitation. Gibbs Ranch north of Wells took the top honors with 3.08 inches of precipitation, followed closely by Eureka with 2.96 inches of precipitation. The active monsoon season was a result of a westward shift of the high pressure system that sets up every summer near the Four Corners region of the United States and is responsible for pushing monsoon moisture northward. This westward shift caused moisture that would normally be pushed into Utah to be displaced further west into the Nevada.



National Weather Service at County Fairs by Paul Eyssautier, Warning Coordination Meteorologist



General Meteorologist Roger Smith (left) and Senior Meteorologist Zaaron Allen (right) eagerly wait for interested visitors to stop by and ask questions about flash floods, lightning and thunderstorms while at the Winnemucca Tri-County Fair.

Did you see us at the fair this summer? The National Weather Service Forecast Office in Elko, NV attended the White Pine County Fair in Ely and the Tri-County Fair in Winnemucca this past summer. We also had a display at the Lamoille County Fair.

We look forward to these opportunities to inform the public about our forecast programs and to provide information about the services offered by the National Weather Service. We hand out reading material on thunderstorms, lightning, flash floods, winter storms and the NOAA Weather Radio. We also provide information about the SKYWARN/Severe Weather Spotter Program.

Our presence at these events allows the public to tell us their opinions about our forecasts. Good or bad, we can take it. Knowing how well we are doing is important to future changes in the forecast process.

If you have problems accessing our web site or receiving the NOAA Weather Radio broadcast, we want to know about it. If you have any questions about our forecasts, the type of weather warning or advisory statements we issue, please let us know. You can talk to National Weather Service representatives at fairs or directly contact our office. Our phone number is (775) 778-6716. You may also contact me directly by email at paul.eyssautier@noaa.gov.

NWS Meteorologists Visit FAA Tower at Elko Airport by Roger Smith, General Meteorologist

National Weather Service meteorologists Randy Settje, Gerald Claycomb and Roger Smith visited the Elko Tower at the Elko Regional Airport shortly before 8 a.m. on Tuesday, July 29th. The Elko area had received around 0.70 of an inch of rain just four days earlier on the 25th, and the land surrounding the airport looked rather green for late July, despite another very hot summer day ahead. The high temperature at the Elko Regional Airport would crest at 98 Fahrenheit late in the day.

The primary purpose of the visit was for the Elko ATC (Air Traffic Control) Weather Inspection, which was conducted by Randy and Gerald. They spoke with Elko Tower Chief, Jim Hoover, about facility details and checked the Air Traffic Control work area to make sure manuals were up-to-date and meteorological instrumentation was working properly. Roger, Randy and Gerry had an opportunity to observe an air traffic controller on duty. He said that the summer is their peak time for number of arrivals and departures due to the increase in numbers of recreational small-aircraft operators. In nearly one hour from 8 a.m. and 9 a.m. the controller directed nearly 30 outbound and inbound flights, including the arrival of a Sky West Brasilia EMB-120 passenger aircraft from Salt Lake City.



Distant view of the Elko Tower at the Elko Regional Airport.

The Shocking Truth About Static Electricity by Brandon Peloquin, Meteorologist Intern

You get out of your car. ZAP! You touch a metal doorknob. ZAP! You give your best friend a pat on the back. ZAP! Yes, we all have first hand experience when it comes to static electricity. But have you ever wondered exactly how and why static electricity happens and what you can do to stop feeling those JOLTS on a regular basis?

To understand static electricity, you first must understand that it all starts with the atom. That's right, that tiniest of tiny, microscopic particles that makes up everything in the world – from erasers and rulers to hands and feet. Each atom is composed of even smaller elements: protons, which have a positive charge; electrons, which have a negative charge; and neutrons, which have no charge. In an ideal physical world, atoms have the same number of protons as electrons and the net charge of the atoms is neutral. However, sometimes the electric charge is not balanced. This occurs when there are more electrons than protons. So, for example, when we slide our feet across our carpeted living room floor, we pick up extra electrons. Then, when we touch our bedroom doorknob, or some other object with a positive charge (metal objects are well known for having positive charges), our extra negatively-charged electrons “jump” to the positively-charged protons on the doorknob (because opposite charges attract) and this electronic jump is the JOLT that we feel when we get shocked.

Back east where I used to live, I usually only experienced this phenomenon in the winter when the air was colder and drier since electrons build up more easily on the skin's surface when it's dry. However, after moving out west where the climate is fairly dry much of the year, I started getting shocked much more often – to the point where it became quite bothersome and even rather painful. After doing some research, I learned that I could help to prevent these shocks by touching the doorknob or car door with another metal object first. For example, pressing a coin or a car key or even a ring against the doorknob or car door first would cause an electric discharge. Then, I could touch the doorknob with my hand with no shock. Another technique which I learned could help prevent shocks is to apply hand lotion to moisturize the skin, which would mean that less electrons would tend to build up on the skin of my hands and any shock would not occur or would be less intense. People can even adjust their wardrobe, changing the fabric of their clothes and the soles of their shoes. But, sometimes no matter what we do, we'll still end up getting that famous ZAP. Just think to yourself that you have an electric personality like no other and perhaps that will make your JOLT a bit less painful.

Changes To Forecast Products by Brandon Peloquin, Meteorologist Intern

Elko 7-Day Forecast

TODAY	WED	THU	FRI	SAT	SUN	MON
Partly Cloudy	Partly Cloudy	Sunny	Partly Cloudy	Partly Cloudy	Partly Cloudy	Partly Cloudy
High: 80	Low: 37	Low: 35	Low: 32	Low: 29	Low: 34	Low: 32
High: 77	High: 77	High: 77	High: 71	High: 70	High: 73	High: 72
POP: 0%	POP: 0%	POP: 0%	POP: 0%	POP: 0%	POP: 0%	POP: 0%

Spring Creek 7-Day Forecast

TODAY	WED	THU	FRI	SAT	SUN	MON
Partly Cloudy	Sunny	Partly Cloudy	Partly Cloudy	Partly Cloudy	Partly Cloudy	Partly Cloudy
High: 79	Low: 36	Low: 34	Low: 31	Low: 27	Low: 32	Low: 30
High: 74	High: 74	High: 76	High: 70	High: 69	High: 72	High: 71
POP: 0%	POP: 0%	POP: 0%	POP: 0%	POP: 0%	POP: 0%	POP: 0%

Carlin 7-Day Forecast

TODAY	WED	THU	FRI	SAT	SUN	MON
Partly Cloudy	Sunny	Partly Cloudy	Partly Cloudy	Partly Cloudy	Partly Cloudy	Partly Cloudy
High: 81	Low: 36	Low: 34	Low: 34	Low: 30	Low: 35	Low: 33
High: 77	High: 77	High: 78	High: 72	High: 71	High: 74	High: 73
POP: 0%	POP: 0%	POP: 0%	POP: 0%	POP: 0%	POP: 0%	POP: 0%

7 Day Quick Forecast Product for Elko County, offering a quick look at daytime weather, daytime probability of precipitation and high and low temperatures through 7 days.

If you have recently wandered onto our website at <http://www.wrh.noaa.gov/elko>, you may have noticed some changes to our Public Forecast Products. One of the most obvious changes lies within our Zone Forecast Product. Our zones no longer contain temperature and probability of precipitation forecasts for specific locations. However, this information can be found in a new product in a tabular format. This Tabular State Forecast Product lists predominant daytime weather, daytime probability of precipitation, and high and low temperatures out to seven days. We also have a 7 Day Quick Forecast Product, derived from the Tabular State Forecast Product, which can be accessed from the “New!” section at the top of our web site home page.

Another change is the discontinuance of the Nevada State Forecast Product and the Recreation Forecast for Great Basin National Park. However, the new Tabular State Forecast Product contains the information which was previously found in the State and Recreation Forecast Products. If you have any comments or questions about the recent changes to our forecast products, feel free to contact us at (775) 778-6716.

Storm Spotters by Brandon Peloquin, Meteorologist Intern

Flash floods. Large hail. Damaging winds. These words may seem to describe the weather in another part of the country, perhaps in the heart of "Tornado Alley" in Oklahoma or Kansas. However, even northern and east central Nevada are vulnerable to stormy weather, with drenching rains, golf ball size hail and winds in excess of 60 mph. Although advanced satellite and radar technology enable weather forecasters to better examine thunderstorms, no level of technology is able to replace the observations from actual humans who provide ground truth to what satellite and radar imagery show. For this reason, our National Weather Service (NWS) operations heavily rely on the Spotter Program -- a network of weather spotters from all counties in our County Warning Area (CWA) who are specifically trained by the NWS to observe severe weather. Every year, our office holds several Spotter Training Sessions which are designed to educate potential spotters on how to identify severe weather. During the past couple of months, our office presented Spotter Training Sessions at Wendover, Ely and Spring Creek, giving each person with a magnetic card which contains our toll free number; pamphlets on flash



Paul Eyssautier talks about Safety Awareness and Storm Spotting at a Spotter Training Session in Wendover during late July.

floods and tornadoes, and a colorful Emergency Disaster Wheel which outlines steps to follow in different severe weather situations. We gained a few new spotters during these Spotter Training Sessions; however, we need more volunteers who can be our eyes and ears in the field! That is, we need more people who can assist us by providing reports of significant weather -- reports that oftentimes help our forecasters formulate watches, warnings and advisories. If you are interested in becoming a weather spotter or would like a Safety Awareness and Spotter Training Session, contact Paul Eyssautier at paul.eyssautier@noaa.gov.

Getting Prepared For Winter by Randy Settje, Hydrometeorological Technician

It may seem early for Cooperative Weather Observers to prepare for winter weather; however, the best time is before the first snowfall. With that in mind, here are some hints to get you in the mood for measuring snow!

At the beginning of each snowfall season:

1. Remove the funnel and inner measuring tube of the 8-inch rain gauge. This will help "catch" a more accurate snowfall.
2. Get out your snowboard. It should be located in an open location, not under trees nor on the north side of structures in the shadows.
3. Review how to measure snow. We have included a snow measurement guide to help you this upcoming winter.

Remember, you should determine and record three values (listed below). Often, we get B-91 forms that have one or more of the values missing. Cooperative snow data has taken on greater importance over the past few years due to NWS modernization. Many airports and weather sites that in the past reported now no longer do. That is why your snow observation is very important to us! Thanks in advance for your renewed efforts!

1. Snowfall - amount that fell since your last observation
2. Snow Depth - total snow on the ground (old snow plus new snow)
3. Melted Snow - melt the snow and measure the water in it

Appendix A

WS TA B-0-26
(9-79)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE

SNOW MEASUREMENT GUIDE

OBSERVERS WITH NON-RECORDING GAGES RECORD THREE MEASUREMENTS WHEN IT SNOWS

1. WATER IN THE SNOW

Record in this column to inches and hundredths.

Melt contents of gage and measure like rain. If high winds have blown snow out of the gage, the outer container is used to obtain a substitute sample from the snow on the ground where the depth represents the amount that fell since yesterday's observation.

RECORD OF CLIMATOLOGICAL OBSERVATIONS
Time of observation (local time) if once daily 6 PM
If at different times, temperature.....precipitation.....

PRECIPITATION				WEATHER CALENDAR			
24 HOUR AMOUNTS							
Hour	Min	Sec	100ths	Hour	Min	Sec	100ths
10	11						
22	20		2				
35	30		5				
T	T		4				
T	T		2				
T	T		T				
.11	0.9		0				X
			0				

3. DEPTH OF SNOW ON THE GROUND AT OBSERVATION TIME

Record in this column to nearest inch--if less than 1/2 inch, record "T".

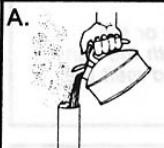
Any time there is snow on the ground at observation time record average depth on ground at observation time. Include old snow as well as newly fallen snow.

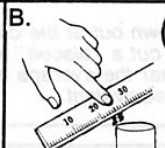
2. SNOWFALL SINCE YESTERDAY'S OBSERVATIONS

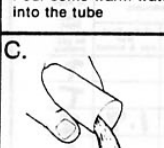
Record in this column to the nearest 0.1 inch.

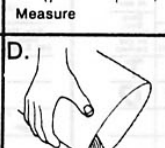
Find some place where the freshly fallen snow is least drifted and is about average depth for the locality. Measure the depth of the snow which fell since yesterday's observation. Report an estimate if the snow melted before observation time.

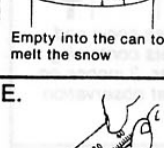
When significant amounts of new snowfall have occurred round off to the nearest inch and record as, for example, 2.0 and 3.0. (Record as 2.0 not 2, 3.0 not 3).

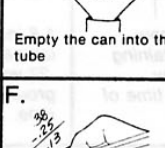
A.  Pour some warm water into the tube

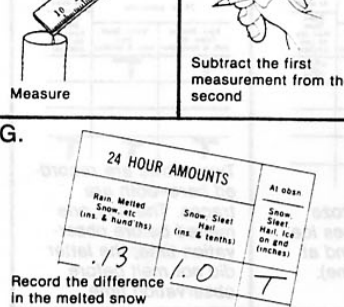
B.  Measure

C.  Empty into the can to melt the snow

D.  Empty the can into the tube

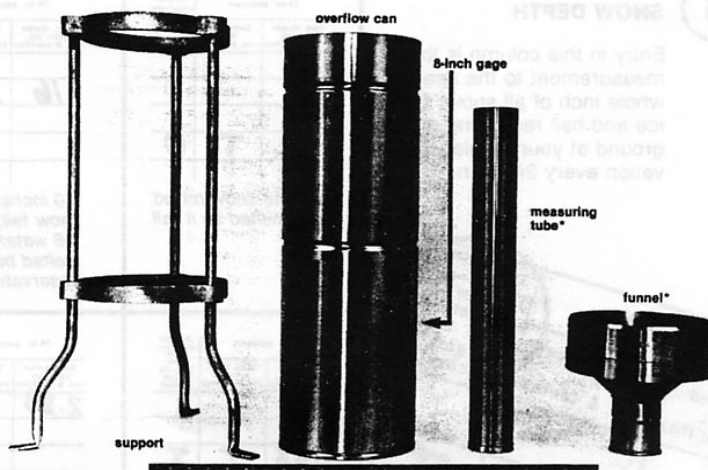
E.  Measure

F.  Subtract the first measurement from the second

G.  Record the difference in the melted snow column.

24 HOUR AMOUNTS		At obsn
Rain, Melted Snow, etc. (ins. & hundredths)	Snow, Sleet, Hail (ins. & tenths)	Snow, Sleet, Hail, Ice on and (inches)
.13	1.0	T

At the beginning of the snowfall season only the 8-inch gage can is exposed to catch the snow. The funnel and measuring tube are removed at the beginning of the snowfall season. The measuring tube is used to measure the water from the melted snow.



* removed during winter months

snow won't fall in representative quantity into the gage if the funnel and measuring tube are not removed.

(See reverse side for steps 2 and 3)

Snow Measurement Guide, provided by the National Weather Service.

2

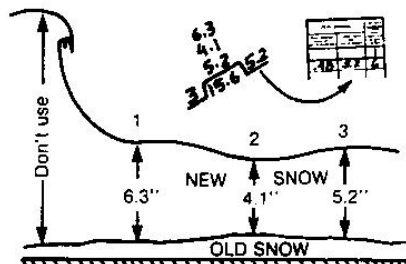
TO MEASURE SNOWFALL SINCE YESTERDAY'S OBSERVATIONS



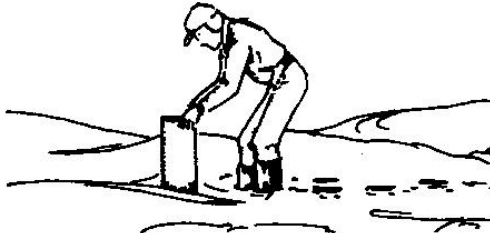
1. If the snow melts as it falls, enter a trace for snowfall.



2. Measure each new snow. Use good judgment in selecting spots where the snow is least affected by drifting.



3. When possible, take several measurements where the snow is least affected by drifting (don't include deep drifts) and average.



4. If the snow has blown out of the can or the "catch" is not good, cut a "biscuit" with the can where the snow is near the average and melt the biscuit for the water equivalent.

3

SNOW DEPTH

Entry in this column is the measurement to the nearest whole inch of all snow, sleet, ice and hail remaining on the ground at your regular observation every 24 hours.

24-hr. amounts		At obsn
Melted & etc (hundredths)	Snow, Sleet, Hail (ins & tenths)	Snow, Sleet, Hail, Ice on gnd (inches)
42	1.6	T

24 hr amounts	At obsn
Rain Melted Snow etc (ins & hundredths)	Snow, Sleet, Hail (ins & tenths)
.32	T 0

Rain and snow mixed;
snow melted as it fell.

24 hr amounts	At obsn
Rain Melted Snow etc (ins & hundredths)	Snow, Sleet, Hail (ins & tenths)
.16	2.0 0

2.0 inches of new
snow fell, containing
.16 water-snow
melted before time of
observation.

24 hr amounts	At obsn
Rain Melted Snow etc (ins & hundredths)	Snow, Sleet, Hail (ins & tenths)
.27	1.8 2

1.8 inches snow and
ice pellets containing
.27 water. 2 inches on
ground at observation
time.

24 hr amounts	At obsn
Rain Melted Snow etc (ins & hundredths)	Snow, Sleet, Hail (ins & tenths)
1.58	T T

1.58 inches rain fell
and also a trace of
hail; hail had not
melted at observation
time.

24 hr amounts	At obsn
Rain Melted Snow etc (ins & hundredths)	Snow, Sleet, Hail (ins & tenths)
2.31	2

Rain fell and froze
causing 2 inches ice
(glaze on ground at
observation time).

24 hr amounts	At obsn
Rain Melted Snow etc (ins & hundredths)	Snow, Sleet, Hail (ins & tenths)
T	T

Two snows are record-
ed here--both are
traces. The first one
melted before obser-
vation time; the latter
did not melt before
observation time.

Snow Measurement Guide, continued.

Winter Weather Alerts by Paul Eyssautier, Warning Coordination Meteorologist

The National Weather Service issues many statements to alert the public about approaching storms. Snow Advisory, Winter Storm Watch, Blizzard Warning, or a Heavy Snow Warning can be heard on the NOAA Weather Radio, television, or seen on our web site during the winter months. You may ask: “What do these statements mean?” or “Is any of this important?”

To answer the first question, statements are defined according to the expected severity of the storm, and how much confidence the forecaster has that the storm will develop. A Watch is issued when the forecasted conditions indicate that a storm may develop. For example, if a Winter Storm Watch is issued, then the National Weather Service is expecting conditions that will result in heavy snow, gusty winds, sleet, or a combination of these events. This also means that the storm has not yet developed, or possibly is several hundred miles away. Although there is some uncertainty about such a storm, this would be a good time to check your emergency winter gear and your grocery items. Check your supply of batteries, candles, and extra food and blankets. If a Winter Storm Warning is issued for your area, then you can expect that the storm is imminent, or will occur within the next 6 to 18 hours. At this time you should have your emergency gear ready and available for use. If commercial power is lost during a storm, it is always helpful to have a battery operated radio to receive the latest weather forecast and news about local conditions. If the forecast includes a Snow Advisory, then expect some significant accumulation of snow. However the amounts will not be as great, nor as hazardous to travel as those expected if a Winter Storm Warning was issued.

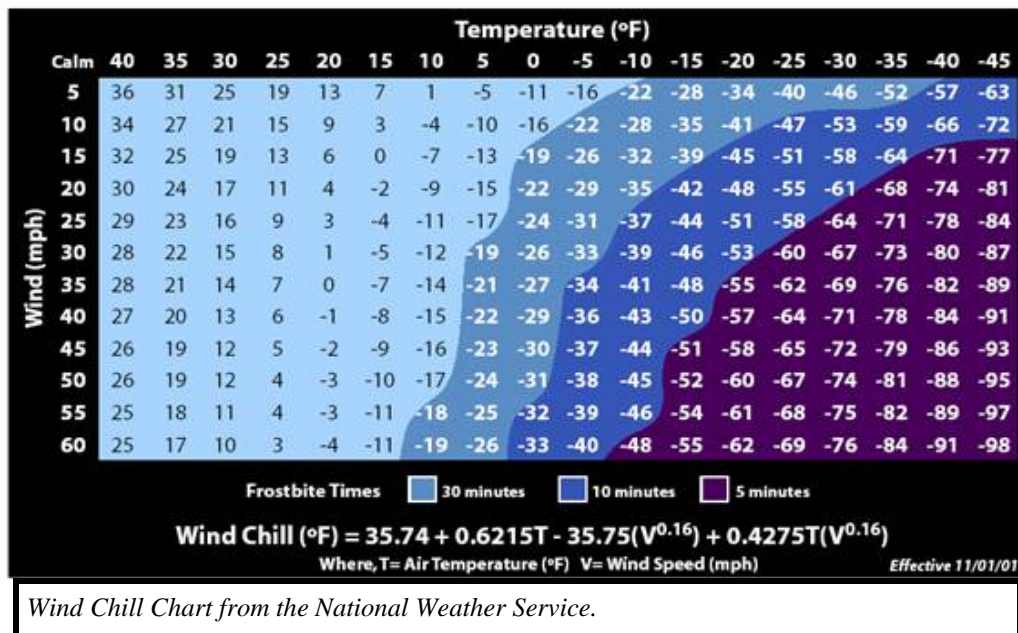
To answer the second question: Yes, this is important! Knowing when and where a storm will strike could save you many hours of being stuck on the highway because you were not prepared for heavy snowfall. It could prevent you from being unprepared at home, in the dark and without heat, if commercial power is lost during a snow, ice or wind storm. Nobody has yet found a practical way to change the weather, but, the National Weather Service Watch and Warning program advises you of the progress and development of a storm. Hopefully, you will have enough advance warning to prepare.

Winter Weather Advisory, Watch and Warning Criteria for Northeast Nevada

Winter Storm Watch or Warning	A combination of gusty winds, sleet and/or snow. Heavy snow of 6 inches or more in 12 hours or 8 inches or more in 24 hours. For elevations above 8000 feet, 8 inches or more in 12 hours and 12 inches or more in 24 hours. A Watch is generally issued 12 hours or more before an event.
Blizzard Warning	Combination of snow with sustained winds of 35 mph or greater for 3 hours or more. Visibilities generally are 1/4 of a mile or less.
Heavy Snow Warning	Widespread snow with accumulations similar to a Winter Storm Warning.
Snow Advisory	Snowfall of 3-6 inches in 12 hours or 4-8 inches in 24 hours. For elevations above 6500 feet, 5-8 inches in 12 hours or 7-12 inches in 24 hours.
Freezing Rain Warning	Ice accumulations of one half inch or more.
Freezing Rain Advisory	Ice accumulations less than one half inch.
Blowing and Drifting Snow Advisory	Visibility reduce in blowing snow, but better than 1/4 of a mile.
Wind Chill Advisory	Widespread wind chill values of -20 to -35 degrees.
Wind Chill Warning	Widespread wind chill values of -35 degrees or colder.



Wind Chill Chart



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